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IS 13521 (1992): Marking systems of diamond/cubic boron nitride abrasive products [PGD 9: Abrasives]



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भारतीय मानक

हीरा/क्यूबिक बोरोन नाइट्राइड अपघर्षी उत्पादों
के लिए सूचना अंकन प्रणाली

Indian Standard

MARKING SYSTEM FOR DIAMOND/CUBIC
BORON NITRIDE ABRASIVE PRODUCTS

UDC 621.92.025 : 621.921.34

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BUREAU OF INDIAN STANDARDS
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Price Group 2

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Abrasive Sectional Committee had been approved by the Production Engineering Division Council.

This standard is being issued with a view to establish a uniform system of marking of diamond/cubic boron nitride abrasive products to designate their various characteristics. Marking on smaller wheels (< 76.2 mm) has been taken up based on the present practices followed in the country.

The usefulness of a uniform system of designation and marking for bonded abrasive products has been recognised by manufacturers and users. The main difficulty, as far as this standard is concerned, lay in the fact that similarly marked grinding wheels produced by different manufacturers do not necessarily give the same results while in use.

It is, therefore, emphasized that this standard applied solely to the marking systems and not to the performance of the grinding wheel in operation. Grinding wheels with the same standard symbols but from different source may, therefore, behave differently from each other when in use. As a result of adoption of this standard, it is hoped that markings on wheels of different makers would be similar. Users may, therefore, include, if possible, the following information in their enquiry or order or both to facilitate supply of replacements:

- a) Name of the manufacturer of grinding wheel of segment previously used; and
- b) Markings on the wheel or tags supplied with it.

While preparing this standard, assistance has been taken from the details provided by the manufacturers of abrasive products and ANSI B74. 13-1982 'Markings for identifying grinding wheels and other bonded abrasives' issued by American National Standards Institute (USA).

Indian Standard

MARKING SYSTEM FOR DIAMOND/CUBIC BORON NITRIDE ABRASIVE PRODUCTS

1 SCOPE

This standard covers the system for marking of diamond/cubic boron nitride abrasive products.

1.1 This standard does not cover the abrasive bonded products made of alumina or silicon carbide grains, which are covered in IS 551 : 1989 'Marking system for bonded abrasive products (other than diamond/cubic boron nitride) (second revision)'.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
551 : 1989	Marking system for bonded abrasive products (other than diamond/cubic boron nitride) (second revision)
10960 (Part 1) : 1984	Grain sizes for diamond or cubic boron nitride : Part 1 Designation and grain sizes distribution.

3 SYSTEM OF MARKING

3.1 Abrasive Products

The marking system of diamond and cubic boron nitride comprises nine symbols (two of which are optional), the sequence of which is arranged in the following order:

- 0 — Manufacturer's symbol for the abrasive (optional)
- 1 — Abrasive type
- 2 — Abrasive (grain) size
- 3 — Grade
- 4 — Concentration
- 5 — Type of bond
- 6 — Bond modification
- 7 — Abrasive depth
- 8 — Manufacturer's identification mark (optional)

Symbols 1 to 7 are to be selected from the standard symbols given in 3. In addition if required, a letter symbol (sequence 0 at Fig. 1)

indicating the nature and origin of abrasive may be prefixed by the manufacturers as per their choice preceding the letter symbol designating the type of abrasive (sequence 1 at Fig. 1).

3.1.1 Illustration of the complete marking system of diamond and cubic boron nitride abrasive products is shown in Fig. 1.

4 STANDARD SYMBOLS

4.1 Types of Abrasive

The type of abrasive shall be designated by the following symbols:

- B — Cubic Boron Nitride
- D — Diamond

4.1.1 Where it is necessary to designate some particular variation of any one of these types, the manufacturer may use in addition a special symbol (sequence 0 at Fig. 1) preceding symbol 1 (see also 3.1).

4.2 The grain size is designated by a number for which reference shall be made to IS 10960 (Part 1) : 1984.

4.2.1 Wherever required, the manufacturer may follow the grain size number with a symbol indicating combination of different grain sizes.

4.3 Grades

The grade is indicated by a letter of the alphabet from A to Z, A being the softest and Z the hardest grade.

4.4 Concentration

The use of concentration symbol is optional. The concentration symbol is the manufacturer's designation which defines relative grain spacing. The preferred concentrations are 50, 75, 100, 120 and 150.

4.5 Bond

The type of bond shall be designated by the following letters:

- B — Resinoid
- M — Metal
- V — Vitrified

4.6 Bond Modification

Within each bond type, manufacturer may have modifications to tailor the bond to a specific application. These may be identified by either letters or numbers.

4.7 Abrasive Depth

In case of cubic boron nitride and diamond wheels, abrasive section depth is indicated by a number or letter which is the amount of total dimensional wear, a user may expect from the abrasive portion of the product.

Most diamond and CBN wheels are made with a depth of impregnation of diamond/CBN grains. Letter 'L' may be included in the marking system to identify a layered type product.

4.8 Manufacturer's Record

The manufacturer's records are designated by symbols. Each grinding wheel manufacturer is at liberty to use the symbol at sequence 8 in

Fig. 1 in the marking system which may be necessary to identify his product.

5 MARKING ON DIAMOND OR CUBIC BORON NITRIDE GRINDING WHEELS

5.1 The markings shall, whenever practicable, be shown on the grinding wheel.

5.2 When grinding wheels are too small (< 76.2 mm) in diameter to permit the use of the complete marking, abrasive (*grain*) size and grade symbols alone may be used on the wheel, or the marking on the wheels may be omitted entirely. In the latter case, the complete marking shall be indicated on tags or labels accompanying the wheels in each container

5.3 Keeping in view the importance of the safety requirements, the labels marked with the maximum operating speed in RPM, shall be fixed on the grinding wheel. Where loose labels or tags are accompanying the grinding wheels, the maximum operating speed shall be stencilled on the grinding wheel. However wheels with outside diameter less than 76.2 mm need not be marked with the maximum operating speed.

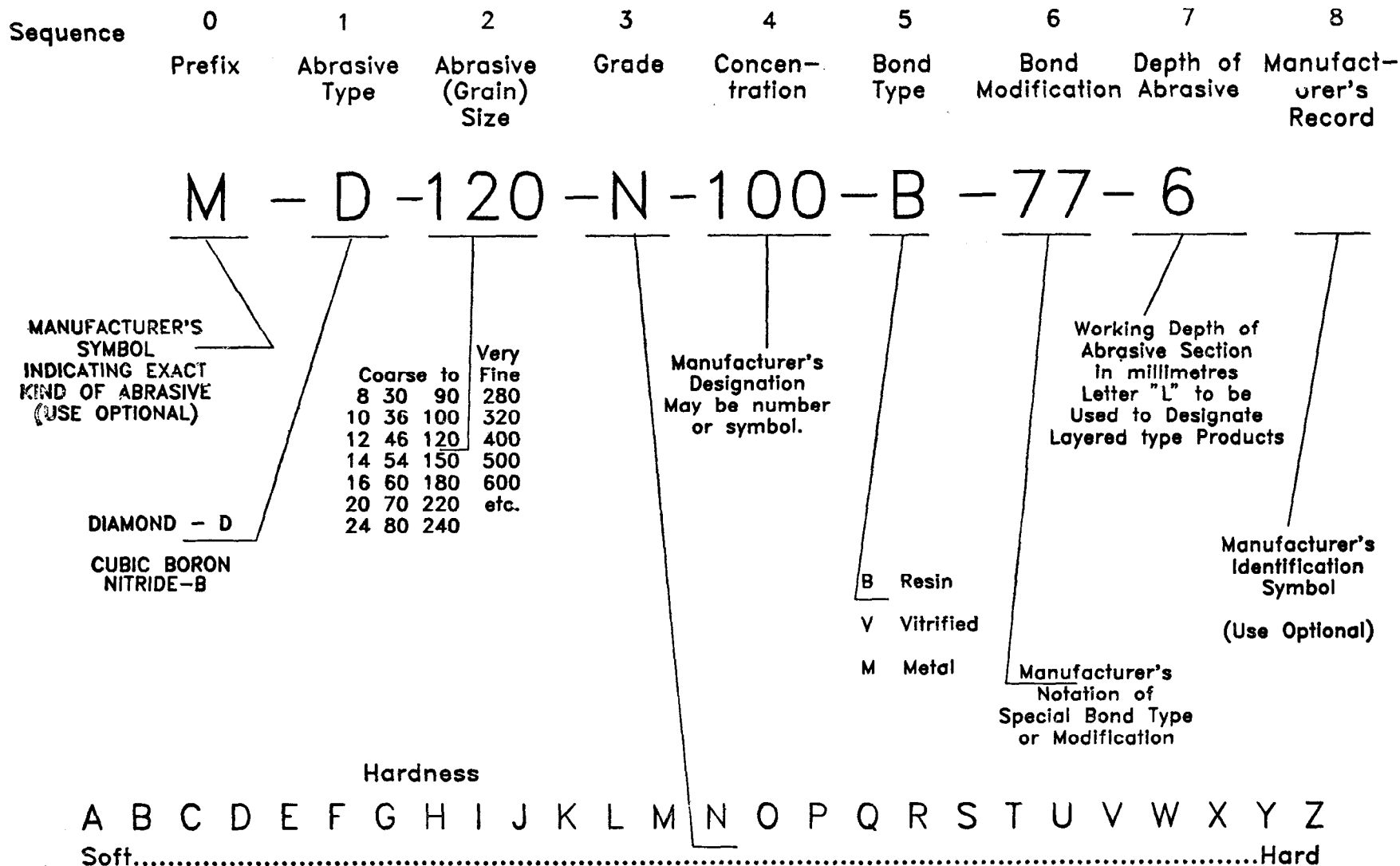


FIG. 1 DIAMOND AND CUBIC BORON NITRIDE MARKING SYSTEM CHART

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